CHAPTER 2

Research design and methodology

2.1 INTRODUCTION

Having described the background to and rationale for the study in chapter 1, this chapter discusses the research design and methodology. This will lead to the identification, definition and classification of concepts for the proposed model for support of women during midlife transition.

The researcher conducted the study in four steps of theory generation, namely concept analysis, construction of interrelationships among concepts, development of the structure and process of the model, and formulation of guidelines for operationalisation of the model. Concept analysis consisted of concept identification and definition, which involved exploring and describing the experience of women undergoing the transition period known as midlife.

The construction of interrelationship statements among concepts helped give structure to the proposed model for the facilitation of health among women experiencing midlife transition and menopause. Then the researcher formulated guidelines for operationalisation of the model in nursing practice using Chinn and Kramer's (1999:140) criteria. A panel of experts evaluated the model and guidelines.

2.2 PURPOSE OF THE STUDY

The main purpose of this study was to develop and describe a model for the facilitation of health for women in midlife transition.

2.3 OBJECTIVES AND STEPS OF THEORY-GENERATION

In line with the main purpose, the study had the following objectives:

- To explore and describe the experience of women in midlife transition
- To identify the main concepts of the proposed model
- To identify the defining attributes of the identified main concept(s) through literature review
- To define the main concept(s) from the attributes identified
- To construct interrelationship statements among concepts in order to give structure to the proposed model
- To describe the structure and process of the proposed model
- To evaluate the model
- To formulate and develop guidelines for the operationalization of the model in practice
- To evaluate the guidelines

The objectives were achieved through the four steps of concept analysis (see chapter 3), construction of interrelationship statements among the concepts (see chapter 4), description of structure and process of the proposed model (see chapter 5), and development of guidelines to operationalise the model (see chapter 6).

2.4   THEORY-GENERATIVE RESEARCH DESIGN

Polit and Hungler (1999:238) define research design as "an overall plan for collecting and analyzing data". In qualitative research, the design is "more fluid" (Polit & Hungler 1999:239). In this context, a theory generative research design that is qualitative, explorative, descriptive and contextual is being followed.

Chinn and Kramer (1999:35) and Dickoff et al's (1968:430) methods were combined in generating the theory. Dickoff et al (1968:430) define theory as a "conceptual system invented for some purpose". Chinn and Kramer (1999:51) describe theory as "creative and rigorous structuring of ideas" and

comprised of elements that can form the basis for descriptive scheme. Inherent in both definitions is the concept of theory generation. Dickoff et al (1968:430) maintain that theory must be generated with a goal in mind and to this end there is purpose in the manner in which the theory is generated. Chinn and Kramer (1999:51) use the notion of concept identification, clarification and classification as the process of theory development. The concepts are conveyed as relationship statements and defined within the context of the theory. Since theory-generation is pivotal to this study, the stages of theory development and the types of theories will be described.

♦ **Meta-theory**

Chinn and Kramer (1999:255) define meta-theory as "theory about theory and the processes for the development of the theory". The theory focuses on philosophical and methodological questions related to the development of a theory. At the level of meta-theory, the researcher considered:

- Analysis of purpose and kind of theory needed (Chinn & Kramer 1995:120).
- Critique of sources and methods of theory development.

♦ **Grand theory**

According to Chinn and Kramer (1995:121), grand theory seeks to explain large segments of the environment or human experiences. It deals with broad goals and seeks to represent the total range of a phenomenon. Consequently, grand theories are not easily tested empirically (Polit & Hungler 1999:107). Learning theorists and sociologists such as Clark and Talcott Parsons have developed general theoretical systems that exemplify grand theory and "claim to account for broad classes of behavior and social functioning" (Polit & Hungler 1999:107). However, grand theory is perceived as not particularly useful for behavioral and applied sciences. Nursing theories are usually more restrictive or focused therefore macro theory is not often applied (Kim 2000:22).

♦ **Middle range theory**

Theories that focus on one piece of reality or experience but incorporate a number of concepts are termed "middle range theories" (Polit & Hungler 1999:107). Chinn and Kramer (1999:87) describe a middle range theory as "one that clusters around a concept". Merton (1973:22) contends that middle range theories are "more useful because they can be tested".

♦ **Practice theory**

Practice theory developed because of mid range theories and links theory to clinical practice (Lo Biondo-Wood & Haber 2002:109). Nursing is a practice discipline and as such, the need to develop theories that give specific guidelines to the practice of nursing, has been identified (Chinn & Kramer (1999:87), Dickoff et al (1968:435) and Meleis (1987:19). This infers a shift from a focus on methodology to developing an understanding of the phenomenon under review in order to provide new practice approaches. Meleis (1987:19) purports that "… theory can be given practical validation and can therefore be allowed to give direction to practice."

♦ **Stages of theory generation**

According to Chinn and Kramer (1995:27), for theory to have practice value, four processes are essential to accomplish theory generation:

- creating conceptual meaning
- structuring and contextualizing theory
- generating and testing theoretical relations
- deliberate application of theory

These stages can be compared to Dickoff et al's (1968:431-434) four levels of theory development:

- Level 1: Factor isolation
- Level 2: Factor relating
- Level 3: Situation relating
- Level 4: Situation producing

2.4.1 Qualitative design

Qualitative research is person centred. The methodology allows the researcher to focus on human beings and their experiences. It takes an "emic" perspective (insider's point of view) and the theoretical frameworks are not predetermined (Holloway & Wheeler 1996:3). Holloway and Wheeler (1996:3) describe qualitative research as "that which focuses on the lived experience and the meanings which people ascribe to these experiences". Accordingly, the researcher adopted a qualitative approach and design in this study to discover and tell the story of women and their experience of midlife transition.

2.4.2 Explorative design

This study was concerned with exploring the lived experiences of women during midlife transition, which implied that the researcher had to depart from a position of knowing to the unknown. In qualitative research, predetermined hypotheses and thoughts do not drive the research process hence the researcher could explore the women's feelings, perceptions and strategising as they transition through midlife. Having collected adequate data on the women's experiences, the researcher employed a descriptive design to describe and represent the findings fully.

2.4.3 Descriptive design

Descriptive design was used in this study to enable the "telling" of the women's own lives. Seibold, Richards and Simon (1994:396) state that researchers describe participants' experience fully and accurately in order to make them "more visible". Strauss and Corbin (1990:22) state that while it is the

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responsibility of the researcher to provide an accurate description of the data being studied, this does not necessarily include that all the data studied be fully described. The researcher used descriptive design to describe

- the experiences of women in the northwest states of the USA during midlife
- the structure and process of a model for support of women engaged in self-care practices in order to attain a state of wholeness
- guidelines to operationalise the model in nursing practice

2.4.4   Contextual design

Context represents the location of the phenomenon to be studied. Implied too are specific conditions which may arise and be applicable to actions, time, space and environment. Context is only valid within the time and context specified (Holloway & Wheeler 1996:192). Consequently, this study was bound by exploring and describing the midlife experiences of women in rural America. Lengermann and Niebrugge-Brantley (1988:117) suggest that, "contextual orientation is vital within the confines of feminist thought, as women tend to blur the boundaries". According to Lengermann and Niebrugge-Brantley (1988:117), it is a characteristic of women's world-view that they look for and selectively perceive relationships between objects, ideas and actions. The researcher described the context of this study, including the background to and the setting in which it was conducted, in chapter 1.

2.5   REASONING STRATEGIES

The process of theory development requires the use of reasoning strategies, including analysis, synthesis, deduction and induction (McKay 1969:394). Use of these strategies enables the formulation of logical arguments to assist with the exploration and description of the phenomenon under study (Polit & Hungler 1999:9). In the present study, the phenomenon was women who are in midlife transition and

the strategies would serve to generate a model for the facilitation of health among women experiencing midlife transition and menopause.

2.5.1   Inductive reasoning

Polit and Hungler (1999:704) define inductive reasoning as "that which moves from specific observations to more general rules". Inductive reasoning involves applying logic from the particular to the general. Qualitative research methodology is of essence inductive in nature (Holloway & Wheeler 1996:3). Theory can be created from collected data. One can observe or experience a phenomenon or reality and from this conclusions may be arrived at that would induce an hypothesis pertaining to the reality (Polit & Hungler 1999:9). In this study, the inductive strategy will be utilized for identifying concepts suitable for developing a model of health promotion for support of women in midlife.

2.5.2   Deductive reasoning

Chinn and Kramer (1999:79) define deductive logic as "reasoning from the general to the particular". Chinn and Kramer (1999:79) go on to say that deductions are made by "applying the rules of logic" and in this way to make predictions from general principles. Deductive reasoning could be seen to be diametrically opposed to inductive reasoning in spite of concepts being similar (Gillis & Jackson 2002:10). In this study, deductive reasoning permitted the researcher to make logical predictions about the experiences of women in general during the menopausal years.

2.5.3   Analysis

Analysis is a reasoning strategy that permits the organization of data in a way that allows researchers to test hypotheses but primarily so that research questions may be answered. Analysis requires "the taking of a complex whole and breaking it into parts so that interrelated constructs that are relevant to the understanding of the main concept are isolated" (Mouton & Marais 1990:103). This study used in-

depth phenomenological interviews with women in midlife transition to collect data, which led to concept identification and analysis.

2.5.4 Synthesis

After analysis, it is necessary to combine or synthesize those concepts that have been broken down in order to produce a whole. This is "interpretation" (Mouton & Marais 1990:103). The researcher combined information identified in concept analysis as follows:

- Drawing conclusions and recommendations, based on the findings of the data from the in-depth interviews.
- Describing the tentative conceptual model using the interrelational statements.
- Using Tesch's (1990) method of analysis during concept identification.
- Constructing relationship statements.
- Describing dialogue with experts to facilitate the description and evaluation of the model.

2.5.5 Hypothetic deductive reasoning

McKay (1969:393) describes a hypothesis as "a relationship statement emanating out of empirical research". McKay (1969:393) asserts that hypotheses are connected using rules of logic. The logic can be inductive or deductive, therefore deductive hypothesis suggests assertions, which are related in a consistent way (Chinn & Kramer 1995:63).

2.5.6 Bracketing

Bracketing requires the researcher to identify ideas or beliefs about the phenomenon and thus, as part of the reductive process, separate them out. This allows the researcher to remain impartial (Gillis & Jackson 2002:183). Fain (2003:222) describes bracketing as occurring when the researcher "identifies

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what he or she knows about the phenomenon under review". Creswell (1998:52) defines bracketing as the researcher "setting aside all prejudgments".

For the purpose of this study, the researcher applied bracketing during data collection and analysis by identifying previous knowledge of the phenomenon, especially assumptions about the process of menopause and the adjustments of midlife.

2.5.7   Intuiting

According to Polit and Hungler (1999:245), intuiting occurs when the researcher remains "open to the meanings attributed to the phenomenon by those who have experienced it". Intuiting refers to the researcher being "immersed in the descriptions of the lived experience" (Fain 2003:222). In order to accomplish this, the researcher had to become totally immersed in the experiences of the women in midlife transition and reflect on all their descriptions of the experience.

2.6   ETHICAL RIGOR

The flexible nature of the qualitative paradigm impacts on matters such as informed consent. In addition, the researcher observed the US Health Insurance Portability and Accountability (HIPAA) Act of 1996 hence the participants' identities are not reflected in any manner that would enable persons to identify them. Ethical rigor was achieved by obtaining informed (written) consent from the participants, assuring them of confidentiality and anonymity, guarding their privacy, and informing them of the right to withdraw from the study at any stage should they so wish.

2.6.1   Informed consent

In this study, all the participants were asked to sign a written consent form. Prior to signing, the researcher informed them of the purpose of the study and their right to withdraw, to have their privacy

maintained and to have access to the findings of the study. The participants were also informed that no remuneration would be given for their participation.

2.6.2   Confidentiality and anonymity

Confidentiality implies that any information that a participant divulges is not made public and available to other people. By agreeing to participate in this study, the participant waives this right because the information is made available in the report. However, the anonymity of the person makes it impossible to link the data to the participant and thus protects the right to anonymity (Polit & Hungler 1999:150). In addition, the actual names and identifying data were nullified and participants will allocate a number, in accordance with the HIPAA Act (1996).

2.6.3   Privacy

To guard the participants' privacy, only data pertaining to the aims of the study was collected. Participants were assured that their thoughts, behaviour and experiences would remain private and not be used in any way that might embarrass them.

2.6.4   Termination

The participants retained the right to withdraw from the study should they so wish in spite of initially agreeing to participate. In addition, the researcher undertook to terminate the research relationship on completion of the study.

2.7   RESEARCH METHODOLOGY

The methodology included the sampling, data collection and analysis methods. The study involved four steps of theory generation: concept analysis, construction of theoretical relationships, description of

structures and processes for the model, and description of guidelines for the operationalization of the model.

2.7.1   Concept analysis

Concept analysis involves concept identification and definition as well as the classification of the concepts identified. These concepts will form the model for the facilitation of self-care strategies for women during the menopause. The objective of the concept analysis was to describe the experience of women during midlife transition.

2.7.1.1   *Population*

All the women in the state of Idaho represented the population. The target population included women aged between 40 and 55. Target population may be described as the entire population or individuals who meet the criteria, whilst the accessible population may be thought of as those women to whom the researcher has reasonable access, which in this study were the population of women in Boise and Nampa (Lo Biondo-Wood & Haber 2002:242).

2.7.1.2   *Sampling technique*

Purposive sampling of ten to twelve women ensured that only women who met the inclusion criteria, namely age, gender and the ability to communicate in English, were included. Polit and Hungler (1999:297) define purposive sampling as "a non-probability sampling method in which the participants are selected for the study based on personal judgment about suitability". It is also referred to as "judgmental sampling". According to Lo Biondo-Wood and Haber, (2002:246) "… purposive sampling assumes that errors of judgment in overrepresenting or underrepresenting elements of the population

in the sample will tend to balance out." It assumes that the researcher's knowledge about the population is complete enough to enable him or her to select cases deemed appropriate to the objectives of the study. According to Lo Biondo-Wood and Haber (2002:246), "the ability to generalize is very limited". The benefits of purposive sampling include the selection of what are deemed "experts" for the study at hand (Polit & Hungler 1999:284). Irrespective of the method used to select the initial participants, purposive sampling enables the researcher to select sample members based on the needs emerging from the early findings (Polit & Hungler 1999:297).

Purposive sampling in the qualitative paradigm is often referred to as "theoretical sampling" (Holloway & Wheeler 1996:77). Unlike other sampling, which is planned beforehand, theoretical sampling continues throughout the study until saturation is reached. According to Gilles and Jackson (2002:190), saturation occurs when "the inclusion of new participants does not lead new information, but rather confirms previously collected data". Patton (1990:47**)** states that the rich in-depth information required by the study guides the selection of the sample. To complete this study, the researcher used three theoretical sampling strategies, namely homogenous, typical case, and confirming and disconfirming case sampling.

❑ **Homogenous sampling** refers to individuals who belong to the same subculture or have similar characteristics. In this study, the sample shared gender and a maturational experience and this enabled a more focused inquiry.

❑ **Typical case sampling** allows the researcher to select a sample that will create a profile for an average (Holloway & Wheeler 1996:77). In this instance, the women who had experienced midlife transition would enable the researcher to describe the phenomenon of midlife transition.

❑ **Confirming and disconfirming case sampling** permits the researcher to check and affirm the concepts identified.

Polit and Hungler (1999:298) state that confirming cases offer enhanced conformability because they "fit" the emerging concepts. Disconfirming cases challenge researchers' assumptions and may suggest the need to expand the concepts.

2.7.1.3 Sampling criteria

In this study, the respondents had to meet the inclusion criteria of age and English communication skills. Women who had experienced surgical menopause were excluded.

2.7.2 Data collection

2.7.2.1 Pilot study

The researcher conducted a pilot study of one participant in October 2003 to determine whether the researcher is able to use appropriate interviewing skills with the women concerned. The participant signed the informed consent (see Annexure 3) and filled out the health questionnaire. An in-depth interview lasted one hour and was tape-recorded. The researcher transcribed the tape recording verbatim. Field notes and memos were completed during and after the interview. The researcher ensured that the environment was quiet and distractions, such as the telephone, were eliminated. Consultation with an expert concluded that the order in which the questions were asked was vitally important. Appropriate and necessary changes were made to the interview guide (see Annexures 4 and 5).

2.7.2.2 Research questions

Van Manen (1990:47) emphasizes that to do phenomenological research is to "question something phenomenological" and it is essential for the researcher to be constantly reminded of the original question in order to remain orientated to the lived experience. Moreover, the question should not only

be clear and easily understood, but must be "lived" by the researcher. In this study, the researcher herself is in midlife and female and so is living the experience herself.

In the interviews, the researcher used an open-ended question to initiate the conversation: "Can you describe your experience of midlife transition?" Probing questions followed, including what the women perceive about health and wellness; the strategies that they employ to manage the symptoms of menopause and how they experience self-care; any information that arose out of the health questionnaire was also explored. The participant's responses determined what questions were asked. This varied from interview to interview. All the interviews were tape-recorded and captured in their entirety.

Various facilitative communication skills, such as paraphrasing, probing, clarifying and summarizing, were employed during the interviews to ensure that the participants were able to describe their menopausal experiences. The researcher used verbal and non-verbal communication and paid attention to non-verbal cues.

2.7.2.3 Field notes

The researcher took field notes during the interviews. After each interview, the researcher wrote observational notes to describe the underlying themes as well as the dynamics during the interview in order to assist her to remember all the aspects of the interview.

According to Polit and Hungler (1999:367), "observational notes are objective descriptions of the events and conversations; information such as time, place, activity, and dialogue are recorded as completely as possible". Observational notes may be accomplished through watching and listening, including the who, what, how of the situation and contain as little description as possible. These notes reflect a verbal description of the setting and the people. Also included are direct quotations of what is said. In addition, the observer's comments in the margin or throughout the running narrative are included and identified

by bracketing or underlining. Observer's comments can also include the researcher's feelings, reactions and initial interpretations. Observational notes can be written to relieve the researcher of some of the burden of remembering. In addition, the notes will allow a record of any observations that will be used in future publications of the research project (Polit & Hungler 1999:370).

The researcher also made theoretical notes to interpret, infer and hypothesize in order to formulate an analytical scheme. Polit and Hungler (1999:369) describe theoretical notes as "interpretive attempts to attach meaning".

During the study, the researcher also made methodological notes. Polit and Hungler (1999:368) describe methodological notes as "instructions or reminders about how subsequent observations will be made". These notes may include instructions or reminders that researchers write to themselves to ensure that similar observations across interviews are interpreted in like manner.

2.7.3 Data analysis

In qualitative research, data analysis occurs concurrently with data collection and interpretation and narrative reporting (Creswell 1994:153). The purpose of the data analysis was to describe the lived experiences of women during midlife and menopause.

The researcher analysed the tape recordings of the interviews according to Tesch's (1990) steps (in Creswell 1994:155):

- Get a sense of the whole. Read all of the transcriptions carefully. Note any ideas as they come to mind.

- Pick one document to review. No format is suggested, it may be the shortest one or the most interesting one or the one first or last in the pile. Go through it and ask yourself what it is about. Try to discover the underlying meaning, write notes in the margin.

- Make a list of all the topics and cluster similar topics together. Arrange similar topics together into columns that might be arranged as major topics, unique topics and others.

- Now take the list and go back to your data. Allocate the topics a code as this will allow for an abbreviated form. Write the code next to the appropriate segment in the text. Using this preliminary organizing scheme will identify whether new categories and codes emerge.

- Find the most descriptive words for your topics and turn them into categories. Determine to reduce your total list of categories by grouping topics that relate to each other. It may be helpful to draw lines between the categories to show interrelationships.

- Make a final decision on the abbreviations for each category and alphabetize these codes.

- Assemble the data belonging to each category in one place and perform preliminary analysis.

- If necessary, recode your existing data.

- Cluster major categories in the most appropriate theory.

The researcher sent the raw data to an independent coder for analysis. The independent coder was a doctorally prepared colleague from one of the neighboring universities who had experience in qualitative data. The protocol for analysis of the data was provided to the coder. The researcher and the independent coder met and reached consensus on the data analysis.

2.7.4   Literature review

In phenomenological research, Gillis and Jackson (2002:182) suggest, "in qualitative investigations, the literature review is usually conducted after the research has been conducted and the data analysed". The authors further recommend this "to place the study findings within the context of what is known about the phenomenon". Some authors are of the opinion that the literature review can be done before or after data collection. Glaser (1992:36) advises against a literature review of any sort, while Morse (in

Holloway & Wheeler 1996:24) contends that it is essential to review the literature so as to "not reinvent the wheel". Creswell (1994:21) recommends that the literature search is used "inductively so that it does not direct the questions asked by the researcher". The purpose of a literature review is to identify what is known about the phenomenon under study. A review might be undertaken to identify similar studies in order to identify similarities in findings (Creswell 1994:21). Literature reviews enhance the trustworthiness of studies by confirming concepts and definitions. A literature review allows researchers to compare emergent themes, and also, compare and contrast their findings with those of similar studies (Holloway & Wheeler 1996:24).

2.7.5   Identification of the main concept(s) of the proposed model

Once data analysis had been done, the researcher used deductive reasoning to identify the main concept(s) of the model.

❑   **Identify defining attributes of the main concept(s)**

In order to give meaning to a concept, it is necessary to define it. Chinn and Kramer (1995:82) describe this as "providing information about word usage". While existing definitions may provide basic information about a particular word, it may be useful to trace the origins of that word to render core meanings (Chinn & Kramer 1999:64). According to Chinn and Kramer (1995:81), concepts can be defined explicitly (a list of definitions is used) or implicitly when the definition is embedded in the narrative. Chinn and Kramer (1995:110) state further that in order to create a valid definition, questions need to be asked that will dictate how the concept is defined, whether explicitly or implicitly or both. Chinn and Kramer (1995:110) ask the question, "can common language meanings be taken as the meaning intended? Would a common language approach lead to differing interpretations of the meanings of the concept?"

In this study, the researcher used several strategies to define the concepts, including dictionary definitions, an extended literature review and model cases.

Dictionary definitions, although useful in providing synonyms and antonyms, are limited in scope. They explain the most commonly used manner in which the words are defined, but do not allow for how a discipline may use a term or if there are perceptual realities that impact the interpretation of the word concerned (Chinn & Kramer 1999:64).

A review of contemporary or classical literature provides a rich source of conceptual meaning (Creswell 1994:37). The researcher consulted current self-help books on menopause and women's health to clarify commonly understood conceptual meanings and reviewed professional literature (including of other disciplines) to assist with defining concepts.

According to Chinn and Kramer (1995:92), model cases representing the phenomenon under study may be helpful in defining concepts. A model case may represent the researcher's understanding of the phenomenon (Chinn & Kramer 1995:83). They are usually described in words that are reflective of one's experience, or may be found in the literature, describing the experiences of others. Chinn and Kramer (1995:83) state that one asks, "what it is that makes the case an instance of the experience?" The more abstract the concept, the more difficult it is to construct a model case.

❑ **Concept definition**

Once the researcher has identified the defining attributes for the main concept(s), it is necessary to formulate a concept definition (Chinn & Kramer 1999:76). Rossouw (1994:18) holds that "definition" should be interpreted according to its Latin meaning, which literally means, "to border off". Rossouw (1994:18) applies the following five rules to ensure that ambiguity is limited in the process of concept definition:

(1) The definition must indicate the core characteristics of the concept

Characteristics that are associated with a particular concept as well as characteristics that are specific or unique to the concept should always be included in the definition of the concept concerned.

(2) Definitions must not be circular

The definition should not become a mere repetition of the concept itself. In other words, the definition should clarify new thoughts about the term being described. To this end synonyms and antonyms should be avoided.

(3) Definitions must not be too broad or too narrow

Broad definitions increase ambiguity while narrow definitions may exclude important aspects of what one is trying to convey.

(4) Definitions should not be stated in figurative language

The main purpose of a definition is to explicitly convey what is meant by the term or concept; therefore, it is essential that the language used is simple, clear and concise.

(5) As far as possible, definitions should not be formulated negatively

When defining a concept, we are trying to establish what we know about the characteristics of the concept. Negative language suggests what a concept is not and thus, as a result we remain ignorant of what it is that the concept truly is purporting to be.

2.7.6 Construction of theoretical relationships

Chinn and Kramer (1999:91) state that construction of theoretical relationships refers to stating, generating and testing theoretical relations. Relationship statements can be descriptive, explanatory or predictive. General description means that the statement projects something of the features of its character. Explanation indicates how or why a phenomenon exists while prediction projects circumstances that create or alter a phenomenon (Chinn & Kramer 1999:77).

Dickoff et al (1968:434) maintain that it is not sufficient for researchers to merely identify or classify the concepts; they must establish theoretical relationships within the concepts. Dickoff et al (1968:434) state that a survey list should be used to construct theoretical relationships. Rather than use the survey list as a means to enumerate the concepts, researchers should use the six listed items as ways to look at a concept as this provides the opportunity of using six different ways to look at the same thing (Dickoff et al 1968:435). Dickoff et al's (1968:435) six items are

- agency (who or what performs the activity)
- patiency or recipience (who or what is the recipient of the activity)
- framework (in what context the activity is performed)
- procedure (what the end point of the activity is)
- dynamics (what the energy source for the activity is, whether chemical, physical, biological, mechanical or physiological)
- terminus (what the end point of the activity is)

2.7.7 Description of structure and process for the model

According to Chinn and Kramer (1999:84), the process and description of theory include

- *Purpose:* What is the purpose of the theory?
- *Model concepts:* What are the concepts that form the model?
- *Assumptions:* What are the assumptions on which the theory is based?

- **Structure:** Does the theory have structure?
- **Relationships:** What is the relationship among concepts of the model?

Chinn and Kramer (1999:92) state that the structure of theory gives form to the conceptual relationships within it. Although not all concepts fall into a structure or demonstrate a relationship, Chinn and Kramer (1999:92) maintain "some recognizable structure is essential to theory because structure flows from relationships".

Model evaluation

Once the theory has been described, it is necessary to evaluate the model. In this study, the researcher used Chinn and Kramer's (1999:142) strategies for theory evaluation as follows:

- ❑ *Generality*

Generality of theory refers to its breadth of scope and purpose (Chinn & Kramer 1999:106).

- ❑ *Accessibility*

Accessibility refers to the extent to which empirical indicators can be identified for concepts within in the theory (Chinn & Kramer 1999:106). They go on to say that the accessibility of the concepts contained in the theory is critical to validating theoretical relationships within the theory. Only selected dimensions of highly abstract concepts may be empirically accessible. According to Chinn and Kramer (1995:135-136), empirical accessibility is essential for guiding research. Empirical accessibility of concepts contained in a theory is basic to testing theoretical relationships and deliberate application of theory.

- ❑ *Importance*

Importance denotes a theory's practical value. If a theory contains concepts, definitions, purposes and assumptions that are grounded in practice, it will have practical value for enhancing research. However, theory that has little empirical accessibility may have little practical value although it could stimulate ideas or generate actions that may improve practice (Chinn & Kramer 1999:108). Importance is also enhanced if the theory projects the future and is realistic. In the case of this study, the question is whether the theory creates a reality that is important to the practice of nursing.

2.7.8   Description of guidelines to operationalize the model

According to Chinn and Kramer (1995:101-104), the final step in theory development involves deliberate application of theory. Dickoff et al (1968:434) refer to this as "situation producing". Deliberate application of theory draws on the research methods to ensure that the theory applied achieves practice goals, that the theoretical relationships are systematically examined in the practice setting and assessment is done to accomplish and achieve the desired outcomes.

2.8   MEASURES FOR ENSURING TRUSTWORTHINESS

The researcher used Guba's model for trustworthiness to ensure the validity, reliability and objectivity of this study (Lincoln & Guba 1985:290). According to Guba (1981:80), "the requirement for good science is justification".

Trustworthiness is said to exist "where the findings of a qualitative study represent reality" (Holloway & Wheeler 1996:162). According to Guba's model (1981:75), four aspects are relevant for the establishment of trustworthiness, namely (a) truth-value, (b) applicability, (c) consistency and (d) neutrality. The researcher established the four aspects of trustworthiness as follows:

- Truth-value using strategies of credibility

- Applicability using the strategies of transferability

- Consistency using the strategies of dependability

- Neutrality using the strategies of confirmability

2.8.1   Truth-value using strategies of credibility

According to Guba and Lincoln (1985:206), truth-value asks whether the researcher has established confidence in the truth of the findings. Truth-value is usually obtained from discovery of human experiences as they are lived and perceived by the participants. Sandelowski (1986:27) maintains that truth-value is subject oriented. Truth-value is usually obtained from the discovery of human experiences as they are lived (Krefting 1991:215). The credibility of this study was enhanced through prolonged involvement, reflexivity, clarification of research basis, member checking, the maintenance of an audit trail, and peer examination. The data was obtained from the participants themselves who were clearly identified and their experiences accurately described. In-depth phenomenological interviews established rapport and a trust relationship between the researcher and the respondents. This is essential to establishing confidence in the truth of the findings. According to Seibold et al (1994:394), researchers should "tell the story" of the participants in a study; in this case, the women interviewed.

❑ **Prolonged engagement**

Lincoln and Guba (1985:301) describe data collection over a period of time in order to increase the validity of the findings as "prolonged engagement". Lincoln and Guba (1985:301) emphasise prolonged involvement so that enough time is spent to build trust. Prolonged engagement was essential to building rapport with the women in the study. Truth-value was obtained by describing the experience, as the women themselves perceive it. Sufficient time was allowed to permit the in-depth interviews during which the women could answer the researcher's questions and ask questions

themselves (which the researcher then answered). Prolonged engagement allowed the participants to become accustomed to the researcher. The researcher lives in the same community as the participants hence they had access to the researcher for any queries.

To demonstrate rigor and ensure trustworthiness, the researcher established an audit trail by means of reflexivity, member checking, peer review, clarification of researcher bias, and structural coherence (Krefting 1991:218).

❑ **Reflexivity (field journal)**

Qualitative researchers may claim neutrality in their fieldwork, however, inherent in the feminist perspective is that researchers bring their own perceptions, values and thoughts to the interview. Researchers become part of the research and not just observers (Krefting 1991:218). Agar (1986:21) states that the researcher's background will dictate the way in which the study is organized and analyzed. In this study, it was important for the researcher to reflect on her dual roles, namely as an educator in women's health and a woman in midlife transition. Krefting (1991:218) describes reflexivity as "the influence that the researcher's own background, perceptions and interests may have on the study". Strategies to enhance reflexivity include maintaining a field journal throughout the research process.

❑ **Member checking**

Guba (1981:75) states that one way of keeping a researcher honest is member checking, which involves the researcher in the technique of continually testing with the informants the data, the analytical categories, interpretations and conclusions. This ensures the participants that the researcher has accurately reflected the reality of their experience thereby avoiding misrepresentation and misinterpretation (Krefting 1991:219).

Member checking ensured an accurate reflection of the participants' experiences. Participants could be contacted for follow-up interviews that permitted clarification and verification of the data interpretation in order to ensure the accuracy of the results (Lincoln & Guba 1985:306). Data that could not be verified were not included in the study. To enhance the ethical aspect of this strategy, data that might harm the participant was not shared with the participant concerned (Krefting 1991:219). Reaffirmation of concepts and clarity of themes was sought from participants during in-depth interviews until no new data emerged; in other words, saturation was reached (Morse 1991:149).

❑ **Peer review**

Peer reviewing allows an opportunity for researchers to present data to suitably qualified persons for comment and to discuss the evolving design. Lincoln and Guba (1985:206) suggest that peer review "involves the researcher's discussing the research process and findings with impartial colleagues who have experience with qualitative methods." The researcher asked a colleague in the city who had experience in qualitative research to review the data in order to confirm emerging themes, repetitions and any contradictions.

❑ **Clarification of researcher's bias**

The researcher was the research tool in this study. To ensure that her own bias did not affect the outcomes, it was essential that the researcher present clarification of her own views and experience. The researcher is a woman who is experiencing midlife herself and consequently identified the following issues: the researcher does not find the symptoms of menopause troublesome, and views menopause as a life stage to be embraced and enjoyed and any physical, psychological or social changes that occur as normal for midlife transition. The researcher also sees self-care as important to maintaining personal health. The researcher perceives health as lifelong, dynamic and the responsibility of the individual. However, the researcher acknowledges that not all women are blessed with good health and an enjoyable midlife transition.

❏ **Structural coherence**

Structural coherence enhances credibility by ensuring that there are "no unexplained inconsistencies between the data and the interpretation of the data" (Krefting 1991:220). Credibility is enhanced if there are no inconsistencies. The researcher ensured that loosely connected data were well described and consistently interpreted. To this end, the researcher was viewed as the measurement tool.

2.8.2   Applicability using strategies for transferability

In Lincoln and Guba's framework (1985:203), transferability refers to" the generalizability of the data". Lincoln and Guba (1985:201) maintain that researchers need to provide sufficient descriptive data to enable evaluation of the applicability of the data to other contexts. The researcher ensured that the decision trail was clear and comprehensive and described the theoretical framework used. In order to allow others to assess the transferability or generalization to other settings, the researcher used the strategies of dense description, purposive sampling, and coding and analysis.

❏ **Dense description**

According to Polit and Hungler (1999:430), dense or thick description allows others to assess the transferability of the study. Dense or thick description implies that the researcher has provided a thorough and rich description of the context and the process. Polit and Hungler (1999:340) describe thick description as "… a rich and thorough description of the research settings or context and of the transactions and processes observed during the inquiry." Accordingly, in this study, the researcher has provided background information about the participants and the research context to provide a database that will assist other researchers to assess transferability (see chapters 1 and 3). Krefting (1991:221) holds that it is helpful to consider the data rather than the subjects to assist with transferability while Lincoln and Guba (1985:302) are of the opinion that transferability is the responsibility of persons wanting to transfer the findings of a study rather than of the researcher of the original study.

❑ **Purposive sampling**

Fain (2003:226) defines purposive sampling as "selected persons who have lived a common experience and are able and willing to describe it". According to Holloway and Wheeler (1996:166), purposive sampling ensures that the findings can be transferred from a representative sample to a whole group. Purposive sampling was employed and this allows the sample to be reflective of women in midlife transition who share a common experience by virtue of their age, gender and experience.

❑ **Coding and analysis**

The researcher used coding and analysis according to Tesch's (1990) model (in Creswell 1994:155) in order to enhance the generalizability of the findings.

2.8.3 Consistency using strategies for ensuring dependability

Dependability refers to the stability of data over time and conditions (Krefting 1991:216). Sandelowski (1986:30) states that "inherent in the goal of reliability is the value of repeatability" and the author suggests that to enhance dependability a decision trail is necessary. The researcher discussed decisions on methodology analysis and theoretical frameworks with her co-promoter and promoter in order to ensure a clear audit trail (Lincoln & Guba 1985:319-320). An expert professional reviewed the tapes, transcriptions, notes and field notes. Polit and Hungler (1999:430) state that an audit inquiry allows scrutiny of all data and relative documents by an objective reviewer.

2.8.4 Neutrality using strategies for ensuring confirmability

Confirmability refers to the objectivity or neutrality of the data (Polit & Hungler 1999:430). According to Guba (1981:75), confirmability is demonstrated when the data are linked to their sources. An audit of

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the study involved the raw data, the recordings, field notes and memos. The researcher indicated clearly how the data was analyzed, the coding system and the emergence of the themes, sub themes and categories and codes. The actual process of the study was clearly delineated, reflecting the intentions of the research proposal. An adequate trail ensured that the conclusions and interpretations could be traced to the sources and were a true reflection of them. Koch (1994:977) in Holloway and Wheeler (1996:168) proposes that "when auditing qualitative research, confirmability occurs with credibility, transferability and dependability."

2.9 CONCLUSION

This chapter discussed the research methodology, clarified theoretical concepts and described various types of theories, ethical considerations, and strategies to enhance trustworthiness.

Chapter 3 covers the research findings and literature review.